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Utility Model Laying-Open Gazette

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Title of the Invention:	Rotational Connection Type Electrical Junction Box
Utility Model Appln. No.	3-86468
Filing Date:	October 23, 1991
Inventor(s):	Eiji Shimochi
Applicant(s):	YAZAKI CORP

[Abstract]

[Object] A rotational connection type electrical junction box is provided that allows smooth insertion connection of male and female terminals.

[Arrangement] An electrical junction box with an upper connection body 4 having one terminal 29 rotatably pivoted on a lower connection body 1 having another terminal 17, the terminals connectable with each other by the upper connection body rotatably joined with the lower connection body, where a connector 3 having the other terminal 17 is rockingly pivoted on the lower connection body 1 and a pushable protrusion 14 is provided on the connector 3, and a guide 24 that can push on the protrusion 14 is provided on the upper connection body 4, such that the protrusion abutting the guide allows the joining angles of the terminals to be matched.

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CLAIMS

[Utility model registration claim]

[Claim 1] In the electric junction box which pivots in the bottom connection object which has an other-end child for the bottom connection object which has one terminal free [rotation], and is made to connect a both-ends child to it by rotation junction on this bottom connection object and this bottom connection object While pivoting the connector which has said other-end child on this bottom connection object, enabling free rocking The rotation connection type electric junction box characterized by having prepared the projected part for a push in this connector, having prepared the guide section which can contact by pressing in this projected part in said bottom connection object, and enabling coincidence of a both-ends child's junction include angle by contact in this projected part and this guide section.

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with the electric junction box of the rotation connection type which can make smoothly insertion connection of a male and a female both-ends child.

[0002]

[Description of the Prior Art]

The external view and drawing 6 which show the electric junction box of a rotation connection type with which drawing 5 was indicated by JP,61-93986,U are important section drawing of longitudinal section showing the connection condition of a terminal similarly.

This electric junction box 35 comes to pivot the bottom connection object 37 which has one terminal 36 in the bottom connection object 39 which has the other-end child 38 free [rotation]. The both-ends children 36 and 38 are implanted in the housing 40 and 41 made of resin, respectively, and make Points 36a and 38a bend and counter a right angle, and it comes to form the crest type contact sections 42 and 43 for junction in these points 36a and 38a.

[0003]

However, if it was in the above-mentioned conventional structure, by rotation fitting of both the connection objects 37 and 39, terminals 36 and 38 carried out field junction of the crest type contact sections 42 and 43, and do not obtain electric connection, and there was a fault that electric contact tends to become [wire extension L of a terminal] imperfect compared with connection by insertion with the existing male tab terminal and male terminal which are not illustrated when short.

[0004]

[Problem(s) to be Solved by the Device]

This design aims at offering the electric junction box of the rotation connection type which can make smoothly insertion connection between a male tab terminal and a male terminal in view of the above-mentioned point.

[0005]

[Means for Solving the Problem]

In the electric junction box to which this design pivots in the bottom connection object which has an other-end child for the bottom connection object which has one terminal free [rotation], and a both-ends child is connected by rotation junction on this bottom connection object and this bottom connection object in order to attain the above-mentioned purpose While pivoting the connector which has said other-end child on this bottom connection object, enabling free rocking The projected part for a push is prepared in this connector, the guide section which can contact by pressing in this projected part is prepared in said bottom connection object, and the structure which enabled coincidence of a both-ends child's junction include angle by contact in this projected part and this guide section is adopted as it.

[0006]

[Function]

When it faces rotating a bottom connection object and making it join to a bottom connection object, and the guide section prepared in the bottom connection object contacts by pressing in the projected part of a connector and carries out the rotation inclination of this connector, the junction include

angle of a male and a female both-ends child is in agreement, and it becomes that a both-ends child's smooth insertion is possible with rotation junction of this bottom connection object.

[0007]

[Example]

Drawing 1 is the decomposition perspective view showing one example of the electric junction box of the rotation connection type concerning this design.

By a diagram, 1 is fixed to the car panel 2 and the bottom connection object which formed the connector 3 in the interior free [rocking], and 4 show the bottom connection object pivoted free [rotation] to this bottom connection object 1.

[0008]

This bottom connection object 1 is pivoted in the frame 5 made of synthetic resin for said connector 3, enabling free rocking. This frame 5 While aligning the seating rim 7 of the shape of two or more rectangle inside the rectangle-like outer frame 6 and preparing in it It comes to prepare the pivotable support hole 11 to said connector 3 in the center of each side attachment wall 10 with which the manifold type of the bearings 9 and 9 of the pair for making said bottom connection object 4 support pivotably is carried out inside the short wall (front wall) 8 of this outer frame 6, and this seating rim 7 counters it further.

[0009]

The upper part of one of this side attachment wall 12 is made to carry out eccentricity of the rotation shaft 13 over this pivotable support hole 11 to back from the rotation shaft 13 further by protruding, and the cylinder-like projected part 14 for a push is formed in the center of the housing both-sides wall 12 of this connector 3. In the housing 15 of this connector 3, the female mold terminal 17 which the elastic contact segments 16 and 16 of a pair were made to counter is formed in parallel with the direction 12, i.e., the side attachment wall, which intersects perpendicularly with the rotation shaft 13, and the male tab terminal insertion hole 19 is formed in the housing upper wall 18. It is equipped with this connector 3 in each seating rim 7 of the bottom connection object 1, respectively, and it makes much terminal strapping possible.

[0010]

On the other hand, said bottom connection object 4 to the front wall 21 of the case 20 made of synthetic resin The male tab terminal [further as opposed to / protrude the rotation shaft 22 over the bearing 9 of said bottom connection object 1, and / the female mold terminal 17 of said connector 3 to the inside of this case 20] 29 mentioned later, It is characterized by having turned caudad the guide bar 24 which has the taper section 23 for contacting by pressing to the projected part 14 of this connector 3, and protruding.

In addition, the stop section 27 to this lock arm 26 is formed in the lock arm 26 and the bottom connection object 1 at the posterior wall of stomach 25 of this bottom connection object 4, respectively, and relay 28, a fuse, etc. are arranged in the upper part of this bottom connection object 4.

[0011]

drawing 2 shows the condition with a group of the above-mentioned rotation connection type electric junction box -- it is a notching front view a part, and said bottom connection object 4 makes the rotation shaft 22 engage with the bearing 9 of the bottom connection object 1, and is supported free [rotation], and the male tab terminal 29 of this bottom connection object 4 is countered and located above the female mold terminal 17 of a connector 3. This male tab terminal 29 is formed in the busbar circuit 30 arranged in the case 20 at one, and is making the point project under the case 20. Moreover, in parallel with this male tab terminal 29, said guide bar 24 turned caudad and has projected.

[0012]

This guide bar 24 makes the taper section 23 at a tip contact the projected part 14 of a connector 3, makes this connector 3 push in the rotation direction (the direction of arrow-head I) of this bottom connection object 4, and the direction (the direction of arrow-head RO) which intersects perpendicularly mostly with rotation of the bottom connection object 4, and is made to incline at the fixed include angle alpha, as shown in drawing 3 . When the taper section 23 contacts a projected part 14, the notching include angle theta of this taper section 23 is set up here so that whenever [tilt-

angle / of a connector 3 / α], i.e., the inclination of the female mold terminal 17, (junction include angle α 1) may become the same as that of the inclination (junction include angle α 2) of the male tab terminal 29. Moreover, the tip of the male tab terminal 29 will be in the condition of poking each other at the tip of the female mold terminal 17, in that case.

[0013]

And with rotation of the further bottom connection object 4, a guide bar 24 makes the side-face 24a meet the projected part 14 of a connector 3, advances into a seating rim 7, and decreases the inclination α of a connector 3 gradually. Insertion connection is smoothly made in the condition that the both-ends children 17 and 29 made the junction include angle α 1 and α 2 in agreement with it and coincidence, and as shown in drawing 4 , connection is completed to association and coincidence of vertical both the connection objects 4 and 1.

[0014]

[Effect of the Device]

Like the above, according to this design, the male tab terminal and female mold terminal which were arranged in the bottom connection object and the bottom connection object can be connected smoothly, and the dependability of electrical installation can be raised.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the decomposition perspective view showing one example of the rotation connection type electric junction box concerning this design.

[Drawing 2] similarly a condition with a group is shown -- it is a notching front view a part.

[Drawing 3] similarly a terminal strapping initiation condition is shown -- it is a notching front view a part.

[Drawing 4] similarly a terminal strapping completion condition is shown -- it is a notching front view a part.

[Drawing 5] It is the front view showing the appearance of the conventional example.

[Drawing 6] It is important section drawing of longitudinal section showing a terminal strapping condition similarly.

[Description of Notations]

1 Bottom Connection Object

3 Connector

4 Bottom Connection Object

14 Projected Part

17 Female Mold Terminal

24 Guide Bar

29 Male Tab Terminal

alpha 1, alpha 2 Junction include angle

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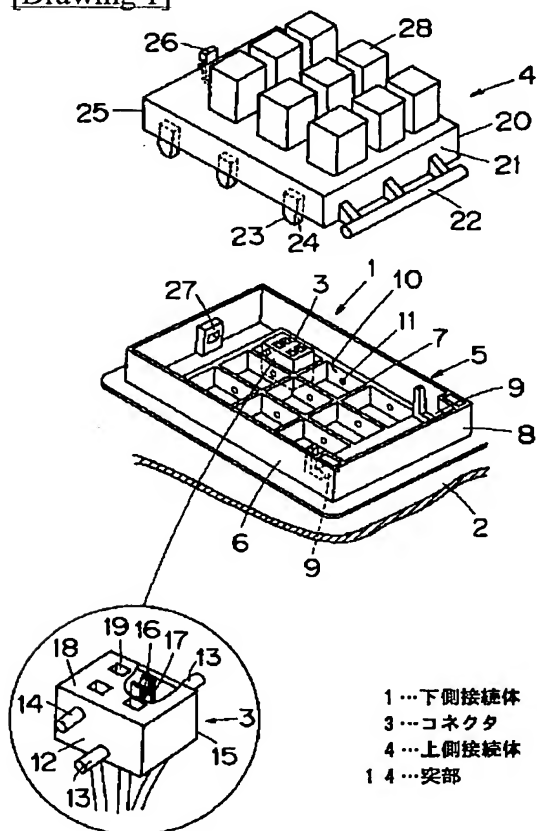
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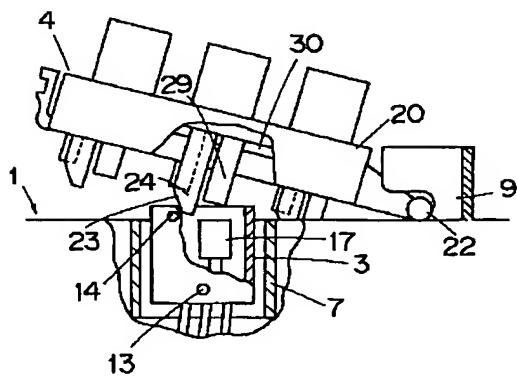
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DRAWINGS

[Drawing 1]

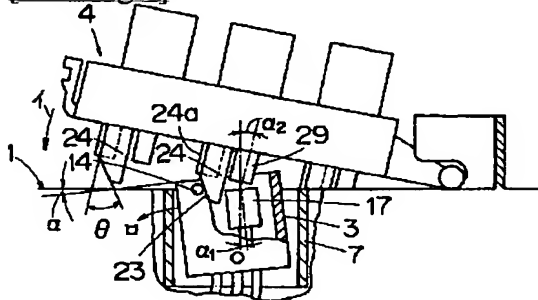


[Drawing 2]

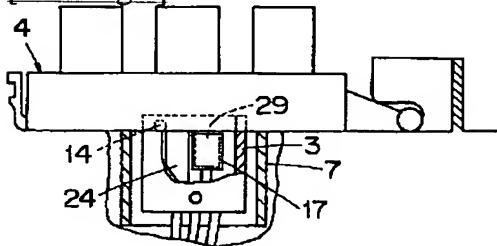


- 17...雌型端子
24...ガイドバー
29...雄タブ端子

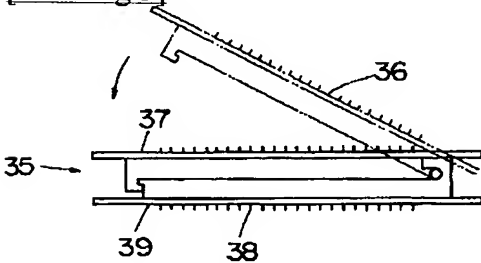
[Drawing 3]



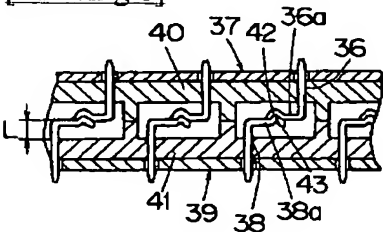
[Drawing 4]



[Drawing 5]



[Drawing 6]



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(71)出願人 000006895

矢崎総業株式会社

東京都港区三田1丁目4番28号

(72)考案者 下地 映次

静岡県湖西市鷺津2464-48 矢崎部品株式
会社内

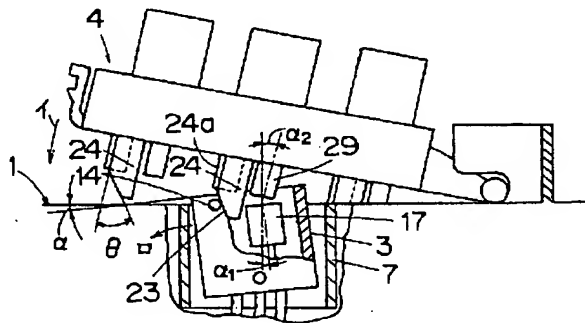
(74)代理人 弁理士 瀧野 秀雄 (外1名)

(54)【考案の名称】 回動接続式電気接続箱

(57)【要約】

【目的】 雄、雌両端子の挿入接続をスムーズに行い得る回動接続式の電気接続箱を提供する。

【構成】 一方の端子29を有する上側接続体4を、他方の端子17を有する下側接続体1に回動自在に枢着し、上側接続体と下側接続体との回動接合により両端子を接続させる電気接続箱であって、下側接続体1に、他方の端子17を有するコネクタ3を揺動自在に枢着すると共に、コネクタ3に押動用の突部14を設け、上側接続体4に、突部14に押接可能なガイド部24を設けて、突部とガイド部との当接によって両端子の接合角度を一致可能とした。



1

【実用新案登録請求の範囲】

【請求項 1】 一方の端子を有する上側接続体を、他方の端子を有する下側接続体に回動自在に枢着し、該上側接続体と該下側接続体との回動接合により両端子を接続させる電気接続箱において、該下側接続体に、前記他方の端子を有するコネクタを揺動自在に枢着すると共に、該コネクタに押動用の突部を設け、前記上側接続体に、該突部に押接可能なガイド部を設けて、該突部と該ガイド部との当接によって両端子の接合角度を一致可能としたことを特徴とする回動接続式電気接続箱。

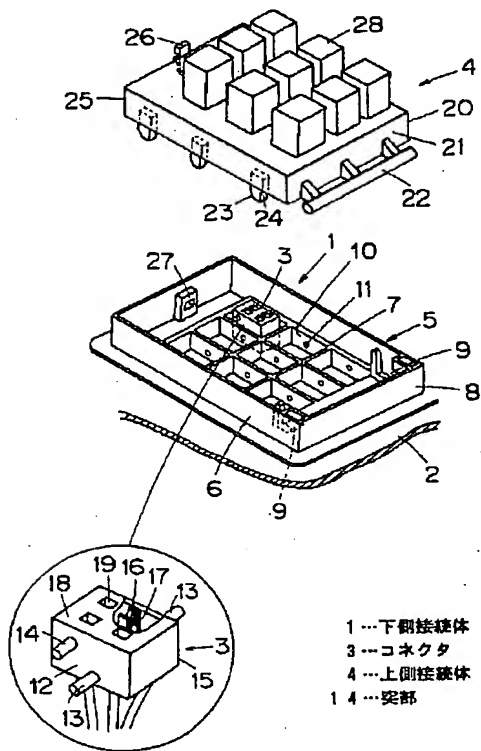
【図面の簡単な説明】

【図 1】 本考案に係る回動接続式電気接続箱の一実施例を示す分解斜視図である。

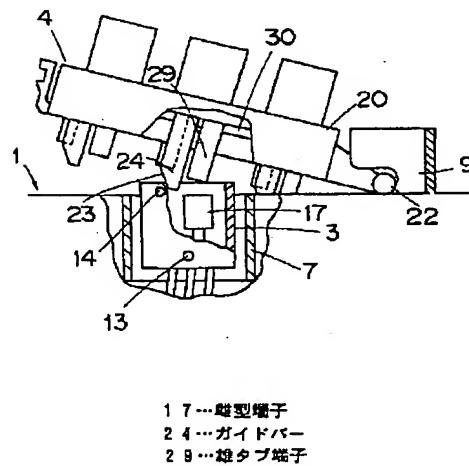
【図 2】 同じく組付状態を示す一部切欠正面図である。

【図 3】 同じく端子接続開始状態を示す一部切欠正面図

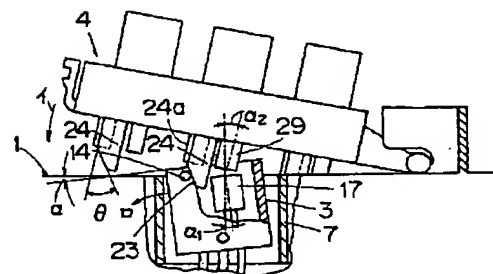
【図 1】



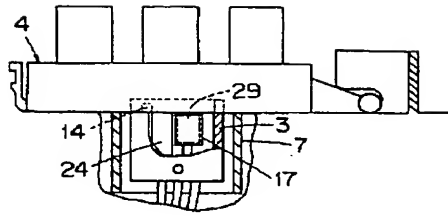
【図 2】



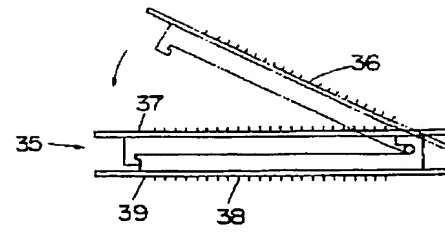
【図 3】



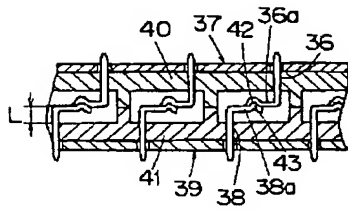
【図 4】



【図 5】



【図 6】



【考案の詳細な説明】**【0001】****【産業上の利用分野】**

本考案は、雄、雌両端子の挿入接続をスムーズに行い得る回動接続式の電気接続箱に関するものである。

【0002】**【従来技術】**

図5は、実開昭61-93986号公報に記載された回動接続式の電気接続箱を示す外観図、図6は、同じく端子の接続状態を示す要部縦断面図である。

該電気接続箱35は、一方の端子36を有する上側接続体37を、他方の端子38を有する下側接続体39に回動自在に枢着してなるものである。両端子36、38は、それぞれ樹脂製ハウジング40、41に植設され、先端部36a、38aを直角に折曲して対向させ、該先端部36a、38aに接合用の山型接触部42、43を形成してなるものである。

【0003】

しかしながら、上記従来構造にあっては、端子36、38が、両接続体37、39の回動嵌合によって山型接触部42、43を面接合させて電気的な接続を得るものであり、図示しない既存の雄タブ端子と雌端子との挿入による接続に較べると、端子の突出長さLが短い場合等に、電気的接触が不完全になり易いという欠点があった。

【0004】**【考案が解決しようとする課題】**

本考案は、上記した点に鑑み、雄タブ端子と雌端子との挿入接続をスムーズに行い得る回動接続式の電気接続箱を提供することを目的とする。

【0005】**【課題を解決するための手段】**

上記目的を達成するために、本考案は、一方の端子を有する上側接続体を、他方の端子を有する下側接続体に回動自在に枢着し、該上側接続体と該下側接続体との回動接合により両端子を接続させる電気接続箱において、該下側接続体に、

前記他方の端子を有するコネクタを揺動自在に枢着すると共に、該コネクタに押動用の突部を設け、前記上側接続体に、該突部に押接可能なガイド部を設けて、該突部と該ガイド部との当接によって両端子の接合角度を一致可能とした構造を採用するものである。

【0006】

【作用】

上側接続体を回動させ、下側接続体に接合させるに際して、上側接続体に設けたガイド部がコネクタの突部に押接して、該コネクタを回動傾斜させることにより、雄、雌両端子の接合角度が一致し、該上側接続体の回動接合に伴って両端子のスムーズな挿入が可能となる。

【0007】

【実施例】

図1は、本考案に係る回動接続式の電気接続箱の一実施例を示す分解斜視図である。

図で、1は、車両パネル2に固定され、内部にコネクタ3を揺動自在に設けた下側接続体、4は、該下側接続体1に回動自在に枢着する上側接続体を示す。

【0008】

該下側接続体1は、合成樹脂製の枠体5に前記コネクタ3を揺動自在に枢着したものであり、該枠体5は、長方形の外枠6の内側に複数の矩形状の内枠7を整列させて設けると共に、該外枠6の短壁（前壁）8の内側に、前記上側接続体4を枢支させるための一对の軸受部9、9を連成し、さらに、該内枠7の対向する各側壁10の中央に、前記コネクタ3に対する枢支孔11を設けてなるものである。

【0009】

該コネクタ3のハウジング両側壁12の中央には、該枢支孔11に対する回動軸13を突設し、さらに、一方の該側壁12の上部に、回動軸13から後方に偏心させて円柱状の押動用突部14を設けてある。該コネクタ3のハウジング15内には、回動軸13と直交する方向すなわち側壁12と平行に、一对の弾性接触片16、16を対向させた雌型端子17を設け、ハウジング上壁18には、雄タ

ブ端子挿入孔 19 を設けてある。該コネクタ 3 は、下側接続体 1 の各内枠 7 内にそれぞれ装着され、多数の端子接続を可能とする。

【0010】

一方、前記上側接続体 4 は、合成樹脂製のケース 20 の前壁 21 に、前記下側接続体 1 の軸受部 9 に対する回動軸 22 を突設し、さらに、該ケース 20 の内側に、前記コネクタ 3 の雌型端子 17 に対する後述する雄タブ端子 29 と、該コネクタ 3 の突部 14 に対する押接用のテーパ部 23 を有するガイドバー 24 とを下方に向けて突設したことを特徴とするものである。

なお、該上側接続体 4 の後壁 25 には、ロックアーム 26、下側接続体 1 には、該ロックアーム 26 に対する係止部 27 をそれぞれ設けてあり、また、該上側接続体 4 の上部には、リレー 28 やヒューズ等を配設する。

【0011】

図 2 は、上記した回動接続式電気接続箱の組付状態を示す一部切欠正面図であり、前記上側接続体 4 は、回動軸 22 を下側接続体 1 の軸受部 9 に係合させて回動自在に支持され、該上側接続体 4 の雄タブ端子 29 は、コネクタ 3 の雌型端子 17 の上方に対向して位置する。該雄タブ端子 29 は、ケース 20 内に配設されたブスバー回路 30 に一体に形成されたものであり、その先端部をケース 20 の下方に突出させている。また、該雄タブ端子 29 と平行に、前記ガイドバー 24 が下方に向けて突出している。

【0012】

該ガイドバー 24 は、図 3 に示す如く、上側接続体 4 の回動に伴って、先端のテーパ部 23 をコネクタ 3 の突部 14 に当接させ、該コネクタ 3 を該上側接続体 4 の回動方向（矢印イ方向）とほぼ直交する方向（矢印ロ方向）に押動させ、一定角度 α で傾斜させる。ここで該テーパ部 23 の切欠角度 θ は、テーパ部 23 が突部 14 に当接した際に、コネクタ 3 の傾斜角度 α すなわち雌型端子 17 の傾き（接合角度 α_1 ）が雄タブ端子 29 の傾き（接合角度 α_2 ）と同一になるように設定される。また、その際、雄タブ端子 29 の先端は、雌型端子 17 の先端に突き合った状態となる。

【0013】

そして、更なる上側接続体 4 の回動に伴って、ガイドバー 24 は、その側面 24 a をコネクタ 3 の突部 14 に沿わせて、内枠 7 内に進入し、コネクタ 3 の傾斜 α を漸次減少させる。それと同時に、両端子 17, 29 は、接合角度 α_1 , α_2 を一致させた状態でスムーズに挿入接続され、図 4 に示す如く、上下両接続体 4, 1 の結合と同時に接続を完了する。

【0014】

【考案の効果】

以上の如くに、本考案によれば、上側接続体と下側接続体とに配設した雄タブ端子と雌型端子とをスムーズに接続させることができ、電氣的接続の信頼性を向上させることができるものである。